

Table of Contents

Preface	2
FCC Statement Warning.....	2
Canadian DOC Notice.....	2
Important Safety Instructions.....	3
Special Notes on LCD Monitors.....	3
Chapter 1 Installation	4
Unpacking.....	4
Viewing Angle Adjustment.....	4
Detaching LCD Monitor from Its Stand.....	4
Interface for Arm Applications.....	5
Connecting the Display.....	5
Connecting the AC Power.....	5
Power Management System.....	5
Chapter 2 Display Controls	6
General Instructions.....	6
Front Panel Control.....	7
How to Adjust a Setting.....	8
Adjusting the Picture.....	8
Chapter 3 Technical Information	10
Specifications.....	10
Standard Timing Table.....	13
Troubleshooting.....	15

Preface

This manual is designed to assist users in setting up and using the LCD Monitor. Information in this document has been carefully checked for accuracy; however, no guarantee is given to the correctness of the contents. The information in this document is subject to change without notice. This document contains proprietary information protected by copyright. All rights are reserved. No part of this manual may be reproduced by any mechanical, electronic or other means, in any form, without prior written permission of the manufacturer.

FCC Statement Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reposition or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced monitor technician for help.

Warning

Use only shielded signal cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Canadian DOC Notice



This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Important Safety Instructions

Please read the following instructions carefully. This manual should be retained for future use.

- To clean LCD Monitor screen;
 - Power off LCD Monitor and unplug the AC Cord.
 - Spray a non-solvent cleaning solution onto a rag.
 - Gently clean the screen with dampened rag.
- Do not place the LCD Monitor near a window. Exposing the monitor to rain water, moisture or sunlight can severely damage it.
- Do not apply pressure to the LCD screen. Excess pressure may cause permanent damage to the display.
- Do not remove the cover or attempt to service this unit by yourself. Servicing of any nature should be performed by an authorized technician.
- Store LCD Monitor in a room with a room temperature of $-20^{\circ} \sim 60^{\circ}\text{C}$ (or $-4^{\circ} \sim 140^{\circ}\text{F}$). Storing the LCD Monitor outside this range could result in permanent damage.
- If any of the following occurs, immediately unplug your monitor and call an authorized technician.
 - * Monitor to PC signal cable is frayed or damaged.
 - * Liquid spilled into LCD Monitor or the monitor has been exposed to rain.
 - * LCD Monitor or the case is damaged.
- Only use the supplied main lead to connect the monitor. For a nominal current up to 6A and a device weight above 3 kg, a line not lighter than H05VV-F, 3G, 0.75 mm² must be used.

Lamp Disposal



LAMP(S) INSIDE THIS PRODUCT CONTAIN MERCURY AND MUST BE RECYCLED OR DISPOSED OF ACCORDING TO LOCAL, STATE OR FEDERAL LAWS. FOR MORE INFORMATION, CONTACT THE ELECTRONIC INDUSTRIES ALLIANCE AT WWW.EIAE.ORG. FOR LAMP SPECIFIC DISPOSAL INFORMATION CHECK WWW.LAMPRECYCLE.ORG.

Special Notes on LCD Monitors

The following symptoms are normal with LCD monitor and do not indicate a problem.

NOTES

- Due to the nature of the fluorescent light, the screen may flicker during initial use. Turn off the Power Switch and then turn it on again to make sure the flicker disappears.
- You may find slightly uneven brightness on the screen depending on the desktop pattern you use.
- The LCD screen has effective pixels of 99.99% or more. It may include blemishes of 0.01% or less such as a missing pixel or a pixel lit all of the time.
- Due to the nature of the LCD screen, an afterimage of the previous screen may remain after switching the image, when the same image is displayed for hours. In this case, the screen is recovered slowly by changing the image or turning off the Power Switch for hours.

Chapter 1 Installation

Unpacking

Before unpacking the LCD Monitor, prepare a suitable workspace for your Monitor and computer. You need a stable and clean surface near a wall power outlet. Make sure that LCD Monitor has enough space around it for sufficient airflow. Though the LCD Monitor uses very little power, some ventilation is needed to ensure that the Monitor does not become too hot.

After you unpack the LCD Monitor, make sure that the following items were included in the box:

- * LCD Monitor
- * User's Manual
- * Quick Setup Guide
- * 1.8M Power Cord
- * 1.8M Monitor-to-PC D-SUB Cable
- * 1.8M Monitor-to-PC DVI Cable (option)

If you find that any of these items is missing or appears damaged, contact your dealer immediately.

Viewing Angle Adjustment

The LCD Monitor is designed to allow users to have a comfortable viewing angle. The viewing angle can be adjusted from -5° to $+15^{\circ}$. (See fig. 1-1)

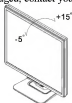


Figure 1-1

Warning

Do not force the LCD Monitor over its maximum viewing angle settings as stated above. Attempting this will result in damaging the Monitor and Monitor stand.

Detaching LCD Monitor from Its Stand

Unscrew screws the swivel base support column and pull down the hinge to release.

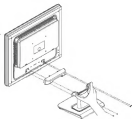


Figure 1-2

Interface for Arm Applications

Before installing to mounting device, please refer to Fig. 1-2.

The rear of this LCD display has four integrated 4 mm, 0.7 pitches threaded nuts, as well as four 5 mm access holes in the plastic covering as illustrated in Figure 1-3. These specifications meet the **VESA Flat Panel Monitor Physical Mounting Interface Standard** (paragraphs 2.1 and 2.1.3, version 1, dated 13 November 1997).

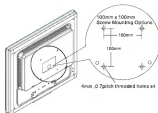


Figure 1-3

Connecting the Display

1. Power off your computer.
2. Connect one end of the signal cable to the LCD Monitor's D-SUB or DVI (option) port. (See Fig 1-4)
3. Connect the other end of the signal cable to the D-SUB or DVI (option) port on your PC.
4. Make sure connections are secure.

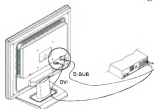


Figure 1-4

Connecting the AC Power

1. Connect the power cord to the LCD Monitor. (See Fig. 1-5)
2. Connect the power cord to an AC power source.

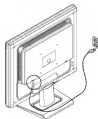


Figure 1-5

Power Management System

This LCD Monitor complies with the VESA DPMS (version 1.0) Power Management guidelines. The VESA DPMS provides four power saving modes through detecting a horizontal or vertical sync. signal. When the LCD Monitor is in power saving mode, the monitor screen will be blank and the power LED indicator will light yellow.

Chapter 2 Display Controls

General Instructions

Press the power button to turn the monitor on or off. The other control buttons are located at front panel of the monitor (See Figure 2-1). By changing these settings, the picture can be adjusted to your personal preferences.

- The power cord should be connected.
- Connect the video cable from the monitor to the video card.
- Press the power button to turn on the monitor position. The power indicator will light up.

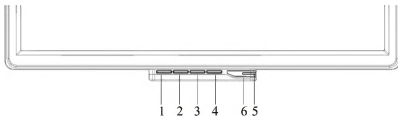


Figure 2-1

External Controls

1	Auto Adjust Key/Exit	4	MENU/ENTER
2	<	5	LED
3	>	6	⏻ / Power Key

Front Panel Control

Power Button:

Press this button to turn the monitor ON or OFF, And display the monitor's state.

Power Indicator:

Green — Power On mode.

Orange — off mode

MENU / ENTER :

Activate OSD menu when OSD is OFF or activate/de-activate adjustment function when OSD is ON

<:

Navigate through adjustment icons when OSD is ON or adjust a function when function is activated.

>:

Navigate through adjustment icons when OSD is ON or adjust a function when function is activated.

Auto Adjust button / Exit:

1. When OSD menu is in active status, this button will act as EXIT-KEY (EXIT OSD menu).
2. When OSD menu is in off status, press this button for 2 seconds to activate the Auto Adjustment function. The Auto Adjustment function is used to set the HPos, VPos, Clock and Focus.

NOTES

- Do not install the monitor in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, or excessive dust or mechanical vibration or shock.
- Save the original shipping carton and packing materials, as they will come in handy if you ever have to ship your monitor.
- For maximum protection, repackage your monitor as it was originally packed at the factory.
- To keep the monitor looking new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner, benzene, or abrasive cleaners, since these will damage the cabinet. As a safety precaution, always unplug the monitor before cleaning it.

How to Adjust a Setting

1. Press the MENU-button to activate the OSD window.
2. Press < or > to select the desired function.
3. Press the MENU-button to select the function that you want to adjust.
4. Press < or > to change the settings of the current function.
5. To exit and save, select the exit function. If you want to adjust any other function, repeat steps 2-4.



(option)

Adjusting the Picture

The descriptions for function control LEDs

Main Menu Icon	Sub Menu Icon	Sub Menu Item	Description
		Contrast	Adjusts the contrast between the foreground and background of the screen image.
		Brightness	Adjusts the background brightness of the screen image.
		Focus	Adjusts picture Focus
		Clock	Adjusts picture Clock
		H. Position	Adjust picture Focus
		V. Position	Adjust picture Clock
	N/A	Warm	Set the color temperature to warm white.
	N/A	Cool	Set the color temperature to cool white.
		User / Red	Adjusts Red/Green/Blue intensity.
		User / Green	
		User / Blue	

	N/A	English	Multi-language selection.
	N/A	繁體中文	
	N/A	Deutsch	
	N/A	Français	
	N/A	Español	
	N/A	Italiano	
	N/A	简体中文	
	N/A	日本語	
		H. Position	Adjust the horizontal position of the OSD.
		V. Position	Adjust the vertical position of the OSD.
		OSD Timeout	Adjust the OSD timeout.
	N/A	Auto Config	Auto Adjust the H/V Position, Focus and Clock of picture.
	N/A	Source Change	Analog and Digital source change.(option)
	N/A	Information	Show the resolution, H/V frequency and input port of current input timing.
	N/A	Reset	Clear each old status of Auto-configuration and set the color temperature to Cool.
	N/A	Exit	Save user adjustment and OSD disappear.

Chapter 3 Technical Information

Specifications

LCD Panel

Size	24"
Display Type	Active matrix color TFT LCD
Resolution	1920 x 1200
Display Dot	1920 x (RGB) x 1200
Display Area (mm)(H x V)	518.4 x 324.0
Display Color	16.2M (true 8bit)
Brightness	500 cd/m ² (typical)
Contrast Ratio	1000:1 (typical & I _L = 6mA)
Response Time	6ms (Gray to Gray)
Lamp Voltage	1800 Vrms (typical)
Lamp Current	6.0 mA rms. (typical)
Viewing Angle	Vertical: 178° Horizontal: 178°

Video

Input Signal	Analogue RGB 0.7Vp-p/ Digital TMDS
Input Impedance	75 Ohm ± 2%
Polarity	Positive, Negative
Amplitude	0 - 0.7 ± 0.05 Vp
Multi-mode Supported	Horizontal Frequency: 24 ~ 80 KHz Vertical Frequency: 49 ~ 75 Hz

Control

Power switch	On/Off switch with LED indicator
--------------	----------------------------------

OSD

Brightness	Digital
Contrast	Digital
Horizontal Position	Digital
Vertical Position	Digital
Phase	Digital
Clock	Digital
Display Mode Setup	Use EEPROM to save settings in memory

Power Management

Mode	Power Consumption*	AC Input	LED Color
On	110W maximum	240 VAC	Green
DPMS	2W maximum	240 VAC	Yellow
Soft switch off	1W maximum	240 VAC	Dark
Disconnected	2W maximum	240 VAC	Yellow: Standby, Suspend, Off Dark: DC Power off

* Meeting VESA DPMS requirements measured from AC Input end of AC power cord.

Sync Input

Signal	Separate TTL compatible horizontal and vertical synchronization
Polarity	Positive and negative

Plug & Play

Supports VESA DDC2B functions

External Connection

Power Input (AC input)	AC socket
Video Cable	1.8M with 15-pin D-sub connector 1.8M with DVI connector (option)

Environment

Operating Condition:	Temperature	5°C to 40°C/41°F to 104°F
	Relative Humidity	20% to 80%
Storage Condition:	Temperature	-20°C to 60° C/-4°F to 140° F
	Relative Humidity	5% to 85%

Power Supply (AC Input)

Input Voltage	Single phase, 100 ~ 240VAC, 50 / 60 Hz
Input Current	1.2 A maximum

Size and Weight

Dimensions	577 (W) x 457 (H) x 221 (D) mm
Net Weight	9.1 ± 0.5 kg
Gross Weight	12.5 ± 0.5 kg

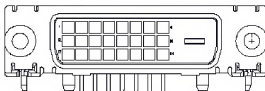
Pin Assignment

Signal					
PIN	Description	PIN	Description	PIN	Description
1	Red	6	Red Rtn	11	NC
2	Green	7	Green Rtn	12	SDA
3	Blue	8	Blue Rtn	13	H. Sync.
4	Digital GND	9	+5V	14	V. Sync.
5	Digital GND	10	Hot Plug Detect	15	SCL

Digital Video Input Connector : DVI – D (option)

Pin – Assignment of DVI –D connector :					
1	TX2-	9	TX1-	17	TX0-
2	TX2+	10	TX1+	18	TX0+
3	Shield (TX2 / TX4)	11	Shield (TX1 / TX3)	19	Shield (TX0 / TX5)
4	NC	12	NC	20	NC
5	NC	13	NC	21	NC
6	DDC-Serial Clock	14	+5V power *)	22	Shield (TXC)
7	DDC-Serial Data	15	Ground (+5V)	23	TXC+
8	NC	16	Hot plug detect	24	TXC-

Pin assignment for DVI – D Connector (option):



Standard Timing Table

If the selected timing is NOT included in table below, this LCD monitor will use the most suitable available timing.

TIMING	FH(KHZ) FV(HZ)	SYNC POLARITY	TOTAL (DOT /LINE)	ACTIVE (DOT /LINE)	SYNC WIDTH (DOT /LINE)	FRONT PORCH (DOT /LINE)	BACK PORCH (DOT /LINE)	PIXEL FREQ. (MHZ)
640x350	31.469	+	800	640	96	16	48	25.175
VGA-350	70.087	-	449	350	2	37	60	
640x400	24.83	-	848	640	64	64	80	21.05
NEC PC9801	56.42	-	440	400	8	7	25	
640x400	31.469	-	800	640	96	16	48	25.175
VGA-GRAPH	70.087	+	449	400	2	12	35	
640x400	31.5	-	800	640	64	16	80	25.197
NEC PC9821	70.15	-	449	400	2	13	34	
640x480	31.469	-	800	640	96	16	48	25.175
VESA-PAL	50.030	-	629	480	2	62	85	
640x480	31.469	-	800	640	96	16	48	25.175
VGA-480	59.94	-	525	480	2	10	33	
640x480	35.00	-	864	640	64	64	96	30.24
APPLE MAC-480	66.67	-	525	480	3	3	39	
640x480	37.861	-	832	640	40	16	120	31.5
VESA-480-72Hz	72.809	-	520	480	3	1	20	
640x480	37.5	-	840	640	64	16	120	31.5
VESA-480-75Hz	75	-	500	480	3	1	16	
720x400	31.469	-	900	720	108	18	54	28.322
VGA-400-TEXT	70.087	+	449	400	2	12	35	
832x624	49.725	-	1152	832	64	32	224	57.2832
APPLE MAC-800	74.55	-	667	624	3	1	39	
800x600	35.156	+	1024	800	72	24	128	36
SVGA	56.25	+	625	600	2	1	22	
800x600	37.879	+	1056	800	128	40	88	40
VESA-600-60Hz	60.317	+	628	600	4	1	23	
800x600	48.077	+	1040	800	120	56	64	50
VESA-600-72Hz	72.188	+	666	600	6	37	23	
800x600	46.875	+	1056	800	80	16	160	49.5
VESA-600-75Hz	75	+	625	600	3	1	21	
1024x768	48.363	-	1344	1024	136	24	160	65
XGA	60.004	-	806	768	6	3	29	
1024x768	53.964	+	1328	1024	176	16	112	71.664
COMPAQ-XGA	66.132	+	816	768	4	8	36	
1024x768	56.476	-	1328	1024	136	24	144	75
VESA-768-70Hz	70.069	-	806	768	6	3	29	
1024x768	60.023	+	1312	1024	96	16	176	78.75
VESA-768-75Hz	75.029	+	800	768	3	1	28	
1024x768	60.24	-	1328	1024	96	32	176	80
APPLE MAC-768	75.02	-	803	768	3	3	29	
1152x864	54.054	+	1480	1152	96	40	192	80

	59.270	+	912	864	3	13	32	
1152x864	63.851	+	1480	1152	96	32	200	94.499
60Hz	70.012	+	912	864	3	1	44	
1152x864	67.50	+	1600	1152	128	64	256	108.00
60Hz	75.00	+	900	864	2	2	32	
1280x960	60.00	+	1800	1280	112	96	312	108.00
60Hz	60.00	+	1000	960	3	1	36	
1280x960	70.00	+	1800	1280	112	96	312	126.00
70Hz	70.00	+	1000	960	3	1	36	
1280x960	75.00	+	1800	1280	112	96	312	135.00
75Hz	75.00	+	1000	960	3	1	36	
1280x1024	64	+	1688	1280	112	48	248	108
VESA-1024-60Hz	60	+	1066	1024	3	1	38	
1280x1024	80	+	1688	1280	144	16	248	135
VESA-1024-75Hz	75	+	1066	1024	3	1	38	
1600x1200	75	+	2160	1600	192	64	304	162
VGSA-1200-60Hz	60	+	1250	1200	50	1	46	
1920x1200	74.6	+	2592	1920	200	136	336	193
VGSA-1200-60Hz	60	+	1245	1200	6	3	36	

Note: Mode 640x350, 640x400 and 720x400 will locate on middle position but cannot be expanded to full screen on vertical direction.

Troubleshooting

This LCD Monitor has pre-adjusted using factory standard VGA timings. Due to the output timing differences among various VGA cards in the market, users may initially experience an unstable or unclear display whenever a new display mode or new VGA card is selected.

Attention

This LCD Monitor Supports Multiple VGA Modes.

Refer to the Standard Timing Table for a listing of modes supported by this LCD Monitor.

PROBLEM Picture is unclear and unstable

The picture is unclear and unstable, please perform the following steps :

1. Enter PC to "Shut Down Windows" status while you're in MS-Windows environment, except Windows XP. In Windows XP open the specific application where the problems appear.
2. Check the screen to see if there's any black vertical stripes appear. If there are, take advantage of the "Clock" function in OSD menu and adjust (by increment or decrement numbers) until those bars disappear.
3. Move to "Phase" function in OSD menu again and adjust the monitor screen to its most clear display.
4. Click "No" on "Shut Down Windows" and back to the normal PC operating environment.

PROBLEM There is no picture on LCD Monitor

If there's no picture on the LCD Monitor, please perform the following steps:

1. Make sure the power indicator on the LCD Monitor is ON, all connections are secured, and the system is running on the correct timing. Refer to Chapter 3 for information on timing.
2. Turn off the LCD Monitor and then turn it back on again. If there is still no picture, press the Adjustment Control button several times.
3. If step 2 doesn't work, connect your PC system to another external CRT. If your PC system Functions properly with a CRT Monitor but it does not function with the LCD Monitor, the output timing of the VGA card may be out of the LCD's synchronous range. Please change to an alternative mode listed in the Standard Timing Table or replace the VGA card, and then repeat steps 1 and 2.

PROBLEM There is no picture on LCD Monitor

If you have chosen an output timing that is outside of the LCD Monitor's synchronous range (Horizontal: 24 ~ 80 KHz and Vertical: 49 ~ 75 Hz), the OSD will display a "Out of Range" message. Choose a mode that is supported by your LCD Monitor.

Also, if the signal cable is not connected to LCD monitor at all or properly, the monitor screen will display a message "No Input Signal".